

WHAT IS CLAIMED IS:

- 1 13. A method of claim 11, further wherein the loading is conducted at a
- 2 temperature of about 37° C.
- 1 14. An erythrocyte loaded with from 10 mM to 50 mM trehalose.
- 1 15. An erythrocyte of claim 11, further comprising ascorbic acid.
- 1 16. An erythrocyte of claim 11, further comprising α -crystallin.
- 1 17. A method for separating fragile or damaged cells from a population of
- 2 erythrocytes, said method comprising
 - 3 contacting said population with a first solution which is hyperosmotic with
 - 4 respect to a solute,
 - 5 loading a solute into said erythrocytes,
 - 6 removing said erythrocytes from said hyperosmotic solution,
 - 7 contacting said erythrocytes with a second solution which is mildly
 - 8 hypoosmotic in comparison to said hyperosmotic solution, thereby lysing fragile or damaged
 - 9 cells, and
 - 10 separating said fragile or damaged cells from said population.
- 1 18. A method of claim 14, wherein said separation is by centrifugation.
- 1 19. A method for freeze-drying erythrocytes comprising lowering the
- 2 hematocrit of said erythrocytes to between 2 and 5%.
- 1 20. A method for freeze-drying erythrocytes, comprising drying said
- 2 erythrocytes in the presence of liposomes.
- 1 21. A method of claim 18, wherein said liposomes are composed primarily
- 2 of unsaturated lipids.
- 1 22. A method for freeze-drying erythrocytes, comprising freeze-drying
- 2 said erythrocytes in the presence of 200-300 mOsm of potassium salts.
- 1 23. A method of claim 19, wherein said erythrocytes are present in a
- 2 hematocrit of up to 15%.
- 1 24. A buffer for drying erythrocytes, said buffer comprising liposomes.

1 25. A buffer of claim 21, wherein said liposomes are composed primarily
2 of unsaturated lipids.

1 26. A buffer for drying erythrocytes, said buffer comprising ascorbic acid.

1 27. A buffer for rehydrating dried erythrocytes, said buffer comprising
2 methylene blue.

1 28. A buffer for rehydrating dried erythrocytes, said buffer comprising
2 transition metal ions.

1 29. A buffer of claim 24, wherein said transition metal ions are selected
2 from the group consisting of zinc, copper, magnesium, and nickel.

1 30. A solution for rehydrating dried erythrocytes, said solution comprising
2 ascorbic acid.

1 31. A solution for rehydrating dried erythrocytes, said solution comprising
2 methylene blue, ascorbic acid, and transition metal ions.

1 32. A method for rehydrating dried erythrocytes, said method comprising
2 contacting said dried erythrocytes with a solution comprising methylene blue.

1 33. A method for rehydrating dried erythrocytes, said method comprising
2 contacting said dried erythrocytes with a solution comprising transition metal ions.

1 34. A method for rehydrating dried erythrocytes, said method comprising
2 contacting said dried erythrocytes with a solution comprising ascorbic acid.

1 35. A method for rehydrating dried erythrocytes, said method comprising
2 contacting said dried erythrocytes with a solution comprising methylene blue, and transition
3 metal ions.